

Claims:

1. Method for isolating hydrogen sulfide from coke oven gas with subsequent recovery of elemental sulfur in a Claus plant, in which the hydrogen sulfide is removed from the coke oven gas by means of gas scrubbing, using an absorption liquid, the charged absorption liquid is regenerated and, in this connection, hydrogen sulfide that accumulates in concentrated form is passed to the Claus plant,

wherein the hydrogen sulfide is reacted with oxygen in the air, in a Claus boiler of the Claus plant, forming elemental sulfur,

wherein the process gas that leaves the Claus boiler is cooled to the temperature required for condensation of the sulfur, in a waste heat boiler, heated after the sulfur has been precipitated, and passed to a reaction oven of the Claus plant, in which sulfur compounds are converted to elemental sulfur on a catalyst, and

wherein the process gas that leaves the reaction oven is cooled to a temperature required for condensation of the sulfur, and the condensed sulfur is precipitated,

characterized in that the Claus plant is operated with only a single reaction oven, and that a working temperature of less than 250°C is set in this oven, and that the process gas that leaves the reaction oven, after precipitation of the condensed sulfur, is passed back into the coke oven gas to be cleaned, ahead of gas scrubbing, with a residual content of hydrogen sulfide that was not converted in the reaction oven.

2. Method as recited in claim 1, characterized in that the reaction oven is operated in a temperature range between 200°C and 320°C.

3. Method as recited in claim 1 or 2, characterized in that a boiler lined with a refractory material, lying horizontally, is used as the Claus boiler, which has a combustion chamber and a catalyst chamber having a catalyst bulk material, which follows horizontally and is delimited on both sides by gas-permeable checker bricks.

4. Method as recited in one of claims 1 to 3, characterized in that the waste heat boiler has a first tube bundle composed of heat exchanger tubes, through which the process gas that exits from the Claus boiler flows, that the waste heat boiler has a second tube bundle composed of heat exchanger tubes, through which the process gas that exits from the reaction oven flows, and that the tube bundles are disposed in a common steam generator chamber, in which low-tension steam is generated.

5. Method as recited in one of claims 1 to 4, characterized in that elemental sulfur is drawn off from the waste heat boiler in liquid form.

6. Method as recited in one of claims 1 to 5, characterized in that a partial stream is branched out of the hot process gas that leaves the Claus boiler, and mixed into the process stream that is passed to the reaction oven, to heat it.